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SPECIFICATION FOR MULTI-EDGED RESCUE AXE (NON-WEDGING)

(First Revision)

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NEW DELHI 110002

Gr 2 *March* 1986

Indian Standard

SPECIFICATION FOR MULTI-EDGED RESCUE AXE (NON-WEDGING)

(First Revision)

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Indian Standard

SPECIFICATION FOR MULTI-EDGED RESCUE AXE (NON-WEDGING)

(First Revision)

0. FOREWORD

0.1 This Indian Standard (First Revision) was adopted by the Indian Standards Institution on 28 August 1985, after the draft finalized by the Fire Fighting Sectional Committee had been approved by the Civil Engineering Division Council.

0.2 Firemen's axe conforming to IS : 926-1985* is normally used by the fire brigades for affecting entrance into any premises on fire or for cutting away dangerous parts or obstructions during a fire or rescue job. It has, however, been experience that the use of firemen's axe presents difficulties in cutting through metals, like the skin of an aircraft fuselage. It is, therefore, necessary that the axe used for this purpose is of a special design which shall ensure speed in cutting operations during an emergency.

0.3 This standard was issued in 1969 covering two types. In this revision only one type (Type B) has been retained which is normally used for rescue purposes. Opportunity has also been taken to up to date its requirements in respect of materials.

0.4 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test, shall be rounded off in accordance with IS : 2-1960†. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard lays down the requirements regarding materials, shape and dimension and construction of multi-edged rescue axe (non-wedging).

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*Specification for firemen's axe (*second revision*).

†Rules for rounding off numerical values (*revised*).

2. MATERIAL

2.1 The steel used in the forging of axe shall have the following composition:

Constituent	*Percent*
Carbon	0·75 to 0·85
Manganese	0·50 to 3·80
Phosphorus, *Max*	0·050
Sulphur, *Max*	0·050
Silicon, *Max*	0·250

2.2 Handle — The insulation of handle shall be of vulcanised rubber capable of withstanding and insulation test given in IS : 926-1985*.

3. SHAPE AND DIMENSIONS

3.1 The shape and dimensions of rescue axe shall be as shown in Fig. 1.

3.2 The axe shall be forged to shape and the handle shall be covered with insulating rubber as shown in Fig. 1.

3.3 The cutting edges, serrated edge and the pick, as applicable, shall be evenly hardened and tempered to a DPN of 500 to 575 which shall be measured within a distance of 3 mm from the cutting edge according to the method laid down in IS : 1501-1968†.

3.4 Handle grip shall be of non-slippery type, that is, provided with a knurled surface.

4. WORKMANSHIP AND FINISH

4.1 The forging shall be free from seams, cracks and surface defects. The edges shall be well shaped as shown in Fig. 1 and finished smooth.

4.2 The metal surfaces of the axe shall be bright finished.

5. PERFORMANCE TESTS

5.1 A 3·15 mm thick mild steel plate having at least one side not less than 1 m long shall be laid horizontally, supported on a suitable frame to raise it at least 30 cm above ground level. The plate shall be cut by the rescue axe to make a slit not less than 60 cm long. The axe shall not get wedged in the mild steel plate during cutting and its cutting end or serrated edges shall not show any dents after the cut is made. The same test shall then be repeated using a 4·00 mm thick aluminium alloy plate and the axe shall give same performance.

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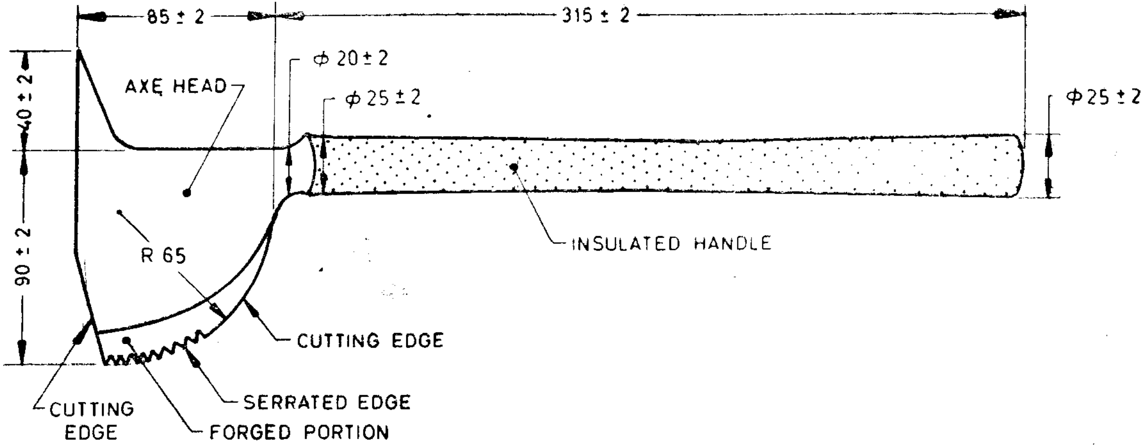
*Specification for firemen's axe (*second revision*).

†Method for vickers hardness test for steel (*first revision*).



All dimensions in millimetres.

FIG. 1 MULTI-EDGED RESCUE AXE (NON-WEDGING)

5.2 A mild steel bar of 5 mm dia shall be laid on a solid foundation. This bar shall then be severed by a single heavy blow of the axe following which the cutting edge shall not show any sign of damage.

5.3 A series of heavy blow shall be struck manually in quick succession by the point of the pick on a mild steel block. After these blows, the point shall have received no damage.

5.4 The axe shall be fitted into the test jig illustrated in Fig. 2 of IS : 926-1985* with the cutting edge resting on the base plate between the two guides and the pick held in the slot in the cap at the top. The handle shall be lying horizontally. A weight of 100 kg shall then be applied to the end of the handle for 5 min. When the weight is removed, the pick shall have received no damage.

6. MARKING

6.1 Each axe shall be clearly and permanently marked with the following information:

a) Manufacturer's name or trade-mark, and

b) Tested for 20 000 volts, and

c) Year of manufacture.

6.1.1 The axe may also be marked with the ISI Certification Mark.

NOTE — The use of ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act, and the Rules and Regulations made thereunder. Presence of this mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard, under a well-defined system of inspection, testing and quality control during production. This system, which is devised and supervised by ISI and operated by the producer, has the further safeguard that the products as actually marketed are continuously checked by ISI for conformity to the standard. Details of conditions, under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

7. CRITERIA FOR CONFORMITY

7.1 Each sample shall be checked for the requirements given in this standard.

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*Specification for firemen's axe (*second revision*).

(*Continued from page* 2)

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